DOI: 10.1111/j.1471-0528.2009.02215.x
www.bjog.org

Effects of female genital mutilation on birth outcomes in Switzerland

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Accepted 30 March 2009. Published Online 14 May 2009.

Objective The primary aim of this study was to determine the desires and wishes of pregnant patients vis-à-vis their external genital anatomy after female genital mutilation (FGM) in the context of antenatal care and delivery in a teaching hospital setting in Switzerland.
Our secondary aim was to determine whether women with FGM and non-mutilated women have different fetal and maternal outcomes.

Design A retrospective case–control study.

Setting A teaching hospital.

Population One hundred and twenty-two patients after FGM who gave consent to participate in this study and who delivered in the Department of Obstetrics and Gynaecology in the University Hospital of Berne and 110 controls.

Methods Data for patients' wishes concerning their FGM management, their satisfaction with the postpartum outcome and intrapartum and postpartum maternal and fetal data. As a control group, we used a group of pregnant women without FGM who delivered at the same time and who were matched for maternal age.

Main outcome measures Patients' satisfaction after delivery and defibulation after FGM, maternal and fetal delivery data and postpartum outcome measures.

Results Six percent of patients wished to have their FGM defibulated antenatally, 43% requested a defibulation during labour, 34% desired a defibulation during labour only if considered necessary by the medical staff and 17% were unable to express their expectations. There were no differences for FGM patients and controls regarding fetal outcome, maternal blood loss or duration of delivery. FGM patients had significantly more often an emergency Caesarean section and third-degree vaginal tears, and significantly less first-degree and second-degree tears.

Conclusion An interdisciplinary approach may support optimal antenatal and intrapartum management and also the prevention of FGM in newborn daughters.

Keywords Childbirth, female genital mutilation, maternal and fetal outcomes.

Please cite this paper as: Wuest S, Raio L, Wyssmueller D, Mueller M, Stadlmayr W, Surbek D, Kuhn A. Effects of female genital mutilation on birth outcomes in Switzerland. BJOG 2009;116:1204–1209.

Introduction

Female genital mutilation (FGM) is defined by the World Health Organisation (WHO) as all procedures that involve partial or total removal of the female external genitalia and or injury to the female genital organs for cultural or any other non-therapeutic reasons.[1] Four types of FGM are described:

Type I is the excision of the clitoral prepuce with or without excision of part or the entire clitoris. Type II is excision of the clitoris with partial or total excision of the labia minora. Type III is excision of part or all of the external genitalia with stitching of the vaginal opening and is called infibulation and the heterogeneous Type IV includes pricking, incising or piercing of the external genitalia, stretching of the clitoris and or labia, cauterisation by burning of the clitoris and surrounding tissue or any other procedure that is performed to cause vaginal narrowing or tightening.

The World Health organisation considers the practice to be violation of human, women's and children's rights; it is illegal in most Western countries.

An estimated 132 million women worldwide have undergone FGM, a procedure commonly practiced in more than 26 countries, mainly in sub-Saharan Africa.[2] However, because of migration, many women with FGM now reside in Western countries and constitute a significant proportion of the country's population.[3–5] Women with FGM have specific medical, gynaecological, obstetric and psychological

problems that doctors, midwives and nurses are not usually trained to manage.[6,7] This problem is exacerbated by secrecy and the illegal nature of the procedure. As a result, very little information is available on women with genital mutilation in Western countries. In addition, women with FGM are ashamed of their condition and often do not volunteer that they have undergone this procedure.[8] Perhaps the most important long-term implication for female genital mutilation is its association with an increased maternal and fetal mortality during childbirth.[9] Little is known about maternal expectations and wishes regarding FGM after delivery.

The primary aim of this study was to determine patients' desires and wishes regarding their external genitalia in a teaching hospital setting in Switzerland.

The secondary aim was to determine if fetal and maternal outcomes in women with FGM differed from those in non-mutilated women.

Patients and method

Ethical approval for this study was obtained by the local ethical committee (KEK Kantonale Ethikkomission Berne, Switzerland).

The study was performed between January 1999 and December 2008.

The University Hospital of Berne (The Inselspital) has a protocol for pregnant women with FGM who are booked at the obstetric outpatients where a team of trained midwives and physicians looks after them. If necessary, an interpreter translates to and from the patients' mother tongue.

As well as the patients' general medical history and gynaecological examination, the type of FGM was classified according to WHO criteria at booking.

The patient was asked how she wanted to proceed with her FGM. Patients with an occlusive form of FGM were asked whether they preferred an intervention during pregnancy or during delivery. The situation was discussed with the patient's partner—if present—and the patients' desires were noted in the case records on specially prepared pro-formas. Patients were asked about any previous health problems they had experienced related to their FGM.

At delivery, the duration of the first and second stages of labour, intrapartum interventions, such as episiotomy, defibulation or medication, were noted. Episiotomies were not performed routinely; the main reasons for episiotomy were suspected fetal distress or operative vaginal delivery.

Immediately after delivery, the baby's weight, APGAR and umbilical arterial and venous pH values were measured (ABL 5; Radiometer GmbH, Thalwil, Switzerland).

The severity of any perineal tear was classified at the time of delivery using the 9th International Classification of Disease. A first-degree vaginal tear was defined as damage to the superficial vaginal epithelium; a second-degree tear as involving the vaginal epithelium and deeper muscles, but excluding the anal sphincters. A third-degree perineal tear was defined as a partial or complete anal sphincter rupture without the involvement of the anal mucosa and a fourth-degree tear as a rupture of the anal sphincter and mucosa.

As controls for fetal and maternal outcomes, we used a group of pregnant women without FGM who delivered at the same time and who were only matched for maternal age.

For statistical analyses, GraphPad Prism for Windows version 5.0 (Graph Pad™, La Jolla, CA, USA) was used.

Results

Data from 122 patients with FGM and from 110 controls were available.

The majority of women were from Somalia ($n = 42$), the Sudan ($n = 33$) and Ethiopia ($n = 27$). The others had come from Tanzania ($n = 3$), Kenya ($n = 6$), Egypt ($n = 4$) and from the Far East ($n = 7$).

Twenty-three patients (19%) had mentioned FGM to their General Practitioner (GP) in the past.

The mean age of FGM patients was 27 years (range 19–37; 95% CI 25.17–30.27) and 29 years in the control group (range 18–43; 95% CI 25.6–31.5). This difference was not statistically significant ($P = 0.2868$, t-test).

The mean parity was three in the FGM group (range 1–8) and two (range 1–5) in the control group ($P = 0.856$).

A Type I FGM was present in 21 patients, Type II in 29, Type III in 58 and 14 patients had a Type IV.

Health problems related to FGM before pregnancy were dyspareunia ($n = 65$), apareunia ($n = 8$), painful menstruation ($n = 45$), sterility ($n = 2$) and problems with micturition. Eight patients had difficulty voiding, twelve patients had had recurrent urinary tract infection more frequently than twice a year and 15 patients had a feeling of incomplete bladder emptying.

When asked about how to proceed with their FGM during pregnancy, eight patients wished to have antenatal defibulation; 52 requested defibulation during labour, 42 requested defibulation during labour only if considered necessary by the medical staff and 20 patients were unable to articulate their expectations.

Four patients who had FGM Type III wished to be closed again after delivery to return to the *status quo ante*, and further two, who also had had FGM Type III, requested to be closed after delivery although with less narrowing than before.

We explained to those four patients who requested complete resuturing that we neither advised the procedure nor did we perform it—the procedure is anyway illegal in Switzerland; their requests were turned down.

Table 1 summarises delivery and fetal data.

There were no statistical differences between FGM patients and controls in relation to fetal outcome, maternal blood loss or duration of labour.

The mean gestational age was 38 + 4 weeks in the FGM group (range 21 + 4 to 41 + 5 weeks) and 40 + 1 weeks (range 36 + 4 weeks to 41 + 3 weeks; $P = 0.7345$) in the control group.

In FGM patients, emergency CS ($P = 0.0012$) and third-degree tears ($P = 0.0188$) occurred significantly more often than in controls. Control patients had significantly more first-degree tears ($P < 0.0001$) and second-degree tears ($P = 0.0073$; all *t*-test) compared to FGM patients.

In FGM patients, the reasons for emergency CS included prolonged labour ($n = 4$), suspicious CTG ($n = 4$) and psychiatric problems ($n = 2$). A particular difficulty in eight further patients was the inability to assess labour adequately because vaginal examination, necessitated by the presence of increased blood loss or meconium-stained amniotic fluid, could not be performed. All these patients had Type III FGM.

In the control group, three patients underwent emergency CS, one because of prolonged labour and two because of a pathologic CTG.

All types of complications were more common with Type III genital mutilation compared to the other less severe forms.

There was no statistically significant difference between elective CS ($P = 0.807$), episiotomy ($P = 0.0774$), forceps ($P = 0.1051$) or ventouse ($P = 1$, all Fisher's exact test, two-sided) in FGM patients compared to controls.

At postpartum follow-up, four patients with Type III FGM and intrapartum defibulation were found to have a wound breakdown, which was treated conservatively. Further follow-up of these patients was uneventful.

One patient after FGM Type III and forceps delivery suffered from prolonged urinary retention with significant residual urine (>100ml). She was taught intermittent clean self-catheterisation and 3 months after delivery, this problem had resolved.

When asked about their satisfaction with the management of their FGM, 65 women (53%) replied that they were very satisfied, 28 (23%) were more or less satisfied and 15 (12%) were not satisfied. Fourteen patients (12%) were unwilling to answer this question.

Those who were not satisfied included the women who had asked for a complete closure ($n = 4$), the patient with urinary retention and four patients with postpartum wound breakdown. Six women were dissatisfied with their general situation after FGM unrelated to defibulation.

Discussion

Worldwide trends of refugee resettlements mean that societies in Western countries are becoming more culturally diverse. For more than a decade, much of this increase has related to sub-Saharan African populations[10] and a number of these refugees, who may have had an FGM, appear as patients in our clinics.

Table 1. Delivery and fetal data of FGM patients and controls

	FGM ($n = 122$)			Controls ($n = 110$)			*P*
	Median	Range	95% CI	Median	Range	95% CI	
Fetal pH art	7.25	7.09–7.37	7.23–7.25	7.26	7.04–7.34	7.21–7.25	0.6597
Fetal pH ven	7.33	7.14–7.48	7.31–7.34	7.38	7.14–7.49	7.30–7.34	0.6552
pH < 7.10 (*n*)	4			3			0.897*
5 minute Apgar < 7 (*n*)	8			9			0.786*
Fetal weight (grams)	3561	500–4760	3099–3375	3600	2100–4300	3296–3538	0.0663
Maternal blood loss (ml)	400	200–1000	376.9–462.8	350	100–3500	294.9–491.3	0.8138
Duration of 1st stage (minutes)	220	40–765	254.3–375.1	300	60–720	271.4–422.1	0.1752
Duration of 2nd stage(minutes)	39	10–210	41.4–74.0	45	20–200	61.3–89.7	0.8235
Elective CS (*n*)	9			8			0.7834
Emergency CS (*n*)	18			3			0.0012
Forceps (*n*)	3			0			0.0672
Ventouse (*n*)	11			10			0.8497
First-degree tear (*n*)	6			28			<0.0001
Second-degree tear (*n*)	6			22			0.0073
Third-degree tear (*n*)	9			1			0.0188
Episiotomy (*n*)	24			16			0.3456

*Fisher's exact test.

Women after FGM—the majority in the current study having undergone infibulations—were not found to have a different duration of labour than the control group. This is different from a study from Sweden[11] that found patients after FGM had a significantly shorter second-stage labour and a lower risk of prolonged labour. That study only investigated nulliparous women and our study population had a mean parity of three, which may be of significance. Our results agree with a recent statement from the WHO that concluded that no documented evidence had been found to confirm a relationship between prolonged and/or obstructed labour and FGM.[12]

Perhaps the most important long-term implication of female genital mutilation is its association with high maternal and fetal morbidity during childbirth in the patients' country of origin.[9,13–15] Our study has shown that this is not the case if FGM patients deliver under managed care in Switzerland.

The frequency of both prolonged labour and instrumental delivery was not found to be higher among circumcised women than in controls; however, third-degree tears were significantly more frequent in the FGM group. It is unlikely that scarring from FGM would be too resilient to be torn during delivery and these tears may be related to scar tissue with decreased tensile strength. Scar tissue consists of mature collagen and the highest concentration of mature collagen is found in tissue after recurrent incision and healing, indicating the importance of inflammatory activity.[13] Thus, parous women after FGM may well have a reduction in tissue strength and, therefore, a greater probability of third-degree vaginal tears.

Emergency CS was significantly more frequent in women with FGM than in controls.

In half of these patients, lack of adequate surveillance of progress of labour in combination with suspicious clinical symptoms led to CS and we may assume that vaginal examination was inadequate because of the small size of the introitus.

In the current study, 3.3% of FGM patients requested re-infibulation or resuturing of the vaginal orifice. This is an important issue raised in the literature[14,15] and is a practice that is common in Africa and has a strong traditional and cultural background,[15] although it is generally illegal in Western countries.[16,17] Difficulties may arise if mothers request this procedure, which is then denied to them; in our study, these women were unsatisfied with their results at follow up. However, as medical professionals we should explain the reasons and aim for an anatomical result that is acceptable from the medical point of view, that is leaving the urethral meatus open without unnecessary vaginal tightening. This is in keeping with the guidelines of the Royal College of Obstetricians and Gynaecologists (RCOG) and the Swiss Gynaecologic association (SGGG), which state that women with FGM should not be re-infibulated after delivery.[18]

Regular education and counselling sessions for expectant mothers are currently available in our hospital. During those sessions, women's health issues including FGM are addressed. A team of midwives, social workers, doctors and translators discuss these issues and give advice to small groups of eight to twelve women. Childcare is organised nearby. These meetings are usually well attended and are promoted and supported by local social organisations. Participants are encouraged to seek gynaecological counselling for health issues related to their FGM.

Overall, 76% of patients were satisfied or very satisfied with the management. We do not know what factors predict service satisfaction. Those who were not satisfied were mainly patients whose requests for a narrow closure had not been granted and those who suffered from complications. A further 12% of patients were unwilling to answer the question of satisfaction and they may have been dissatisfied, but may have been afraid of future care withdrawal in case of criticism. Antenatal booking of women during the first trimester of pregnancy provides an excellent opportunity to identify those who have undergone FGM and offer them defibulation and specialist service clinics, where they can receive appropriate advice and care by staff who have the training and experience to anticipate, prevent and treat any complication arising throughout pregnancy and particularly during labour. In their own country, for example, women with Type III FGM are usually defibulated by the traditional midwife on the wedding night to allow sexual intercourse.[5,7,19] In Western countries, defibulation is usually achieved by consummation; as a result, the vaginal orifice remains too small for spontaneous delivery.[5] Based on this observation, women with FGM are offered antenatal defibulation in our hospital. However, only 6.5% of the patients in the current study agreed to have this procedure performed during pregnancy; the rest preferred to be defibulated during labour probably because they intended to avoid additional painful procedures.

A weakness of this study is that FGM patients and controls were only matched for age and not for parity, ethnicity, etc, which may influence results. The reason for not matching parity was that FGM patients often have a higher parity than controls; however, in the current study, the (higher) parity of FGM patients did not reach statistical significance.

When caring for women with FGM, we need to be conscious not only of the cultural background but also of their personal history and any catastrophic experiences they may have endured. Many of these patients have been exposed to severe and prolonged stressors with broad impacts on their mental health and well-being. Accumulated stresses including war experiences, personal violence, sexual assault,

refugee status and the circumstances under which FGM was performed, may leave prolonged effects in their aftermath.[20]

Only 19% of the patients in this study had mentioned FGM and related problems to their GP. This is similar to the findings of a UK study[5] in which 20% of women had contacted their GP because of health-related FGM problems. Although we did not enquire about the women's personal attitude towards FGM, several patients told us that they were ashamed of their FGM; this may lead to a decreased willingness to talk about genital problems.

A recent study from Belgium[21] showed that there is a lack of knowledge among gynaecologists about FGM including its classification, the provision of care and legislation. This study also showed that only about one-third of the gynaecologists discouraged women from having their daughters circumcised. Even in the UK, with a high proportion of immigrants and standards for guidance from the RCOG, 58% of healthcare professionals in a University Teaching Hospital were unable to list the categories of FGM and 47% incorrectly thought that caesarean section was the best way of managing the delivery of patients with FGM.[22] These data support the need for FGM integration in training programmes for healthcare professionals. Female genital mutilation must not only be seen in the medical context alone but also as a violation of several aspects of patients' Human Rights.[1]

An interdisciplinary team approach including gynaecologists, obstetricians, midwives, psychologists, nursing staff and paediatricians[23] with specialist training in FGM issues is necessary for the appropriate management of women with FGM in pregnancy and life.

The reasons why women request re-infibulation after delivery, and the influence of their social circumstances and the attitude of their male partners' needs further research. The perception of health—and in particular, FGM with its sequelae—is not entirely individual but is relative to any individuals' societal and cultural background. This in turn is determined by interactions between the members of any defined collective, whose perception of wellbeing is defined by the health and context of those members. Future research should also address factors that predict service satisfaction, sexual function (using validated questionnaires such as the Female Sexual Function Index [FSFI]) and urinary and faecal incontinence in patients who have undergone FGM. Robust data are needed to educate mothers about the prevention of FGM in their daughters.

Disclosure of interests

The authors have no conflict of interest to disclose.

Contribution to authorship

All the authors contributed equally to the planning of the study (SW; DW; LR; MDM; WS; DS; AK). SW and DW collected the data and performed part of the data analyses. LR, MDM, WS and DS participated in data analyses and critical review of the manuscript. AK had the initial idea for the study and has written the manuscript.

Details of ethics approval

Ethical approval was obtained from the local ethics committee as uploaded (KEK Kantonale Ethikkommission Berne, Switzerland, kek-bern.ch, President: Prof Dr pharm N. Thüller, Postfach 56, CH-3010 Berne, Switzerland).

Funding

There was no funding for this study.

Acknowledgement

We thank Mr R Campbell FRCS for his help with the preparation of the manuscript. ■

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